THIS PAGE BLANK (USPTO)

(54) Portable communication terminal capable of transmitting text data

(57) In a conventional portable communication terminal device, it is trouble that the whole sentence to be transmitted must be inputted by a user with hand on transmission of an electronic mail. Some fixed forms used comparatively often are stored in the device. It is so arranged that a letter sequence inputted by the user can be inserted to a part of the fixed form thus troublesome in forming a transmission letter is reduced.
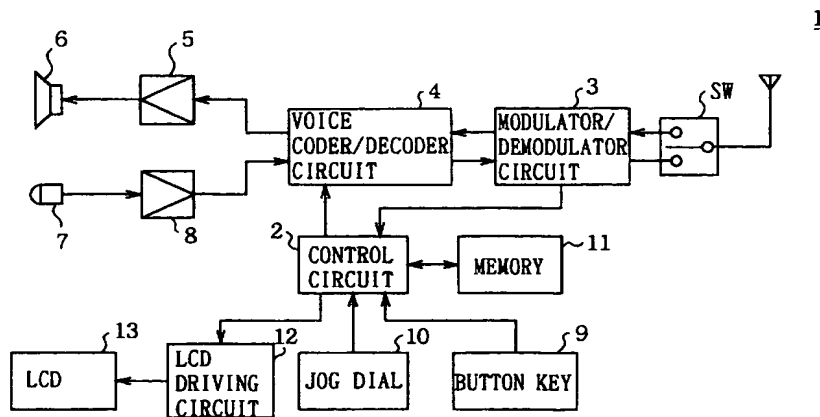
FIG. 1

EP 0 755 126 A2

Description

This invention relates to a portable communication terminal capable of transmitting text data.

Nowadays, some devices are provided with an electronic mail function capable of transmitting text data being a comparatively simple sentence between terminals in portable telephone service. On using this function, a user generally inputs the whole transmission sentence by means of an input device such as a tenkey.

By the way, in case of a portable telephone, the number of keys usable for input is limited and further keys are small, thus the troublesome for input is very large and it is a trouble work requiring a time even if it is a simple sentence.

In view of the foregoing, an object of this invention is to provide a portable communication terminal capable of transmitting text data in which a sentence to be transmitted more speedy and easily than a conventional one can be input.

The foregoing object and other objects of the invention have been achieved by the provision of a portable communication terminal capable of transmitting text data comprises: input means used for selecting the operation of said portable communication terminal and inputting letters; display means capable of displaying at least letters and a cursor; storage means for storing a plurality of specific text data; and control means for displaying text data selected from said plurality of typical pattern text data stored in the storage means by said input means on said display means, and inserting the letters which is inputted by said input means into a predetermined position of said text data displayed to complete a transmission text data.

The invention will be further described by way of example, with reference to the accompanying drawings, in which like parts are designated by like reference numerals or characters, and in which:-

In the accompanying drawings:

Fig. 1 is a block diagram showing an example of a portable communication terminal device according to this invention;
Fig. 2 is a schematic diagram showing a structural example of a jog dial;
Fig. 3 is a schematic diagram showing an example of a fixed sentence;
Fig. 4 is a flow chart showing the procedure when selecting an electronic mail function;
Figs. 5A and 5B are schematic diagrams showing displayed picture when forming a transmission sentence using a fixed sentence; and
Fig. 6 is a schematic diagram showing a displayed picture when the inputting has been predetermined.

Preferred embodiments of this invention will be described with reference to the accompanying drawings:

(1) General Construction

Fig. 1 shows a portable telephone 1 as an example of a portable communication terminal device according to this invention.

The portable telephone 1 is structured centering a control circuit 2. The control circuit 2 has a microprocessor structure and the circuit 2 controls internal circuits such as a modulator/demodulator circuit 3 and a voice coder/decoder circuit 4.

When receiving signals, the modulator/demodulator circuit 3 operates to input a signal of a radio frequency band which is received by an antenna via a switch SW, and output the modulated signal to the voice coder/decoder circuit 4. In this case, the voice coder/decoder circuit 4 decodes the demodulated signal to a voice signal and outputs it to a speaker 6 via an amplifier 5.

When transmitting signals, the voice coder/decoder circuit 4 operates to code a voice signal inputted through a microphone 7 and an amplifier 8 and output it to the modulator/demodulator circuit 3. In this case, the modulator/demodulator circuit 3 modulates the inputted voice signal to a signal of a radio frequency band to be transmitted radiates via the switch SW and the antenna.

Note that, the portable telephone 1 is provided with an electronic mail function capable of transmitting and receiving a comparatively simple sentence in addition to entering the telephone number and the name of the other parties to a telephone book. A button key 9 and a jog dial 10 are used for inputting letters and numerals in operating these functions.

The button key 9 is composed of several push button keys in addition to ten numeral keys "0" to "9".

In case of this embodiment, a plurality of alphabets are allocated to eight numeral keys "2" to "9" respectively, excepting "0" and "1" from ten numeral keys "0" to "9" constituting the button key 9, so that alphabets can be inputted with these keys. For example, "a" to "c" are allocated to "2" and "d" to "f" are allocated to "3", other keys are similar to those.

Note that, to input alphabets, the numeral key to which letters are allocated may be pushed a few times. For example, when inputting "a", the numeral key "2" is pushed once, and when "b", the numeral key "2" is pushed twice, similarly, when "c", the numeral key "2" is pushed three times.

On the other hand, the jog dial 10 is composed of a circle member which is free in rotation in the circumference direction (A - B) and also slidable in the radial direction (C - D) and the switch SW. The circle member is a rotary encoder 10A in which two circle boards are fixed and formed on a slide board, not shown in the figure, the two circle boards composed of the surfaces on which an electrode pattern is formed are facing to each other. In this case, the slide board is ordinarily pushed toward the direction of an arrow C by the force of a spring, and slides to close the electrode of the switch SW only when the user pushes the jog dial 10 in the

radial direction.

The user can make a line the cursor is displayed to move upward and downward and a letter to switch by turning the jog dial 10 in the circumference direction. Also, the user can determine the selection of function by pushing the jog dial 10 in the radial direction and determine the input of letter.

Note that, the information which is inputted and selected by means of these button key 9 and the jog dial 10 is stored in a memory 11.

In case of this embodiment, the memory 11 is used not only for storing the above information but also for storing a fixed sentence for electronic mail. In this case, a fixed sentence stored in the memory 11 is a sentence comparatively often used in forming an electronic mail, and so it is arranged such that a letter sequence formed by the user can be inserted easily into a specified position. Fig. 3 shows a display example of this fixed sentence. In Fig. 3, the position shown by "∇" is a position capable of inserting a sentence formed by the user. These various information are displayed on an LCD device 13 which is driven by an LCD driver circuit 12.

(2) Electronic Mail Function

The input procedure of a transmission sentence when selecting an electronic mail function will be described hereinafter with Fig. 4.

If it is detected that the electronic mail function is selected in the situation where a function list is displayed, the control circuit 2 proceeds from step SP1 to step SP2 to call a message forming function. After starting up this message forming function, the control circuit 2 proceeds to step SP3 to switch display to a picture for selecting a fixed sentence and wait selecting by the user. At this time, if the user selects one in the picture, the control circuit 2 proceeds to step SP4 to display the selected fixed sentence on the screen of the LCD device 13.

In this situation, the control circuit 2 shifts to the processing judging whether something inputted by the user in step SP5, as a result, if input is found, it proceeds to step SP6 to judge whether the contents of the input is to select an inserting position.

If the user's operation is the selection of an inserting position, the control circuit 2 obtains an affirmative result and proceeds to step SP7 to instruct the LCD driver circuit 12 to move a cursor K to the specified position.

Thereafter, the control circuit 2 proceeds to the processing of step SP8 to display the cursor K at the specified position and then returns to step SP5.

On the other hand, if the operation in step SP5 is not the selection of an inserting position, the control circuit 2 obtains a negative result in step SP6 and proceeds to step SP9 to judge whether the inputted contents is an instruction to determine the input.

If a negative result is obtained here, the control circuit 2 regards the forming of a simple sentence as being not yet finished and proceeds to step SP10 to instruct the LCD driver circuit 12 to insert the letter sequence inputted by the user into the position of the cursor K.

Then, the control circuit 2 proceeds to the processing of step SP11 to display the letter sequence inputted into the specified position and returns to step SP5.

On the contrary, if an affirmative result is obtained in step SP9, the control circuit 2 proceeds to the processing of step SP12 to transmit the formed simple sentence via the modulator/demodulator circuit 3 and then finishes the message forming function and the electronic mail function in step SP13.

(3) Display Examples

Figs. 5A, 5B, and 6 show operational examples when forming a simple sentence using the message forming function of the electronic mail function on the above structure.

If the user selects the electronic mail function in the function selecting picture, a picture for selecting a plurality of fixed sentences is displayed on the screen of the LCD device 11.

Herein, for example, if the user selects a fixed sentence asking for telephone call, the picture shown in Fig. 5A is displayed.

The user turns the jog dial 10 in the circumference direction while viewing the displayed picture to make the position of the cursor K to move, for selecting the input position of a letter sequence. Fig. 5A is an example of the case where the jog dial 10 is turned downward in the circumference direction to move the cursor K after "from".

After the position to be inserted is determined as the above, the user inputs any letter sequence with the button key 9.

In case of this example, the user inputted "MIKE". This situation in the midst of input is shown in Fig. 5B.

Here, if no more letter sequence is inputted only inputting "MIKE", the user turns the jog dial 10 downward in the circumference direction and inputs determination of the transmission sentence by moving the cursor K on an input determination mark.

After this determination of the transmission sentence, the portable telephone 1 transmits a simple sentence, "please call me/ dial no/at/from MIKE", via the antenna.

According to the above structure, the user can transmit necessary information to the other party only by inputting a little letter sequence by using a fixed sentence without inputting the whole sentence of the transmission sentence. Therefore, a portable telephone 1 capable of improving its usability of the electronic mail function can be realized.

(4) Other Embodiments

In the aforementioned embodiment, it has been described about the sentence shown in Fig. 3 as an

example of a fixed sentence, however, this invention is limited to this but also applicable to the other various fixed sentences.

Moreover, in the aforementioned embodiments, it is assumed that the position capable of inserting a letter sequence is only where shown by "▽" in a fixed sentence stored previously. However, a letter sequence can be inserted into the other position. Also, it can be arranged such that a letter sequence stored previously can be corrected.

Further, in the aforementioned embodiments, it has been described in the case where the input of a formed sentence is determined by moving the cursor K on the input determination mark, however, this invention is not limited to the case but can instruct the portable telephone 1 to determine the input by using the other method. For example, in the case where the telephone has an input determination key, input can be determined by pushing the key, further, input can be determined by pushing the jog dial 10 in the radial direction. Moreover, if the cursor K is movable to anywhere in the document, input can be determined by selecting a position of the other than "▽" with the cursor K.

In the aforementioned embodiments, it has been described in the case where the jog dial 10 having such a structure as shown in Fig. 2 is used, however, this invention is not limited to the case but also is applicable to a jog dial having other structure. Further, a shuttle key which always returns to a neutral position when leaving hand from the key in turning operation in the circumference direction can be used instead of the jog dial 10.

In the aforementioned embodiments, it has been described in the case where the button key 9 and the jog dial 10 are provided as input means in the portable telephone 1, however, this invention is not limited to the case but also applicable in the case where either of the key and dial is provided, more specifically, it is applicable to both, a portable telephone 1 having only the button key 9 as an input means and a portable telephone 1 having only the jog dial 10 as an input means.

In the aforementioned embodiments, it has been described about the LCD device as a display means, however, this invention is not limited to this but also applicable to the case where the other display means is used.

Also, in the aforementioned embodiments, it has been described about a portable telephone as an example of a communication terminal device, however, this invention is not limited to this but also applicable to a communication terminal device such as a portable information terminal.

As described above, according to this invention, when forming an electronic mail, a transmission sentence can be completed only by adding any letter sequence to a part of the selected fixed sentence, thus the transmission sentence can be formed speedy and easily.

While there has been described in connection with the preferred embodiments of the invention, it will be obvious to those skilled in the art that various changes and modifications may be aimed, therefore, to cover in the appended claims all such changes and modifications as fall within the true spirit and scope of the invention.

Claims

1. A portable communication terminal capable of transmitting text data, comprising:

    input means used for selecting the operation of said portable communication terminal and inputting letters;
    display means capable of displaying at least letters and a cursor;
    storage means for storing a plurality of specific text data; and
    control means for displaying text data selected from said plurality of specific text data stored in said storage means by said input means on said display means, and inserting the letters which is inputted by said input means into a fixed position of said text data displayed to complete transmission text data.

2. The portable communication terminal according to claim 1, wherein

    said control means displays a predetermined mark at said fixed position in said specific text data which is displayed on said display means.

3. The portable communication terminal according to claim 2, wherein said control means makes input of letters by said input means possible at a position where said predetermined mark and said cursor are superimposed.

4. The portable communication terminal according to claim 1, 2 or 3, wherein said control means makes insertion of letters by said input means impossible except at said fixed position.

5. The portable communication terminal according to claim 1, 2, 3 or 4, wherein said input means comprises button keys.

6. A portable communication device according to claim 5, wherein said button keys comprise numeral keys to each of which a plurality of letters is allocated.

7. A portable communication device according to claim 6, wherein said button keys are adapted to be used for dialling another terminal to which said data is to be transmitted.

8. The portable communication terminal according to

any one of the preceding claims, wherein said input means comprises a rotary encoder which slides when pushing in the radial direction.

9. The portable communication terminal according to claim 8, wherein the inputted letters are determined by pushing said rotary encoder in the radial directions.
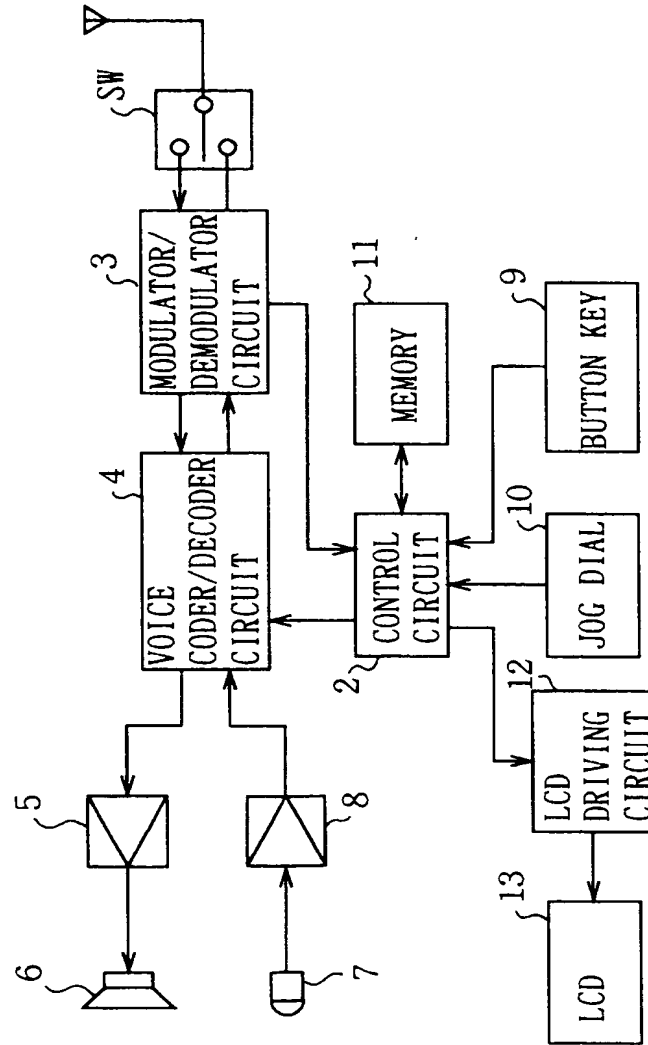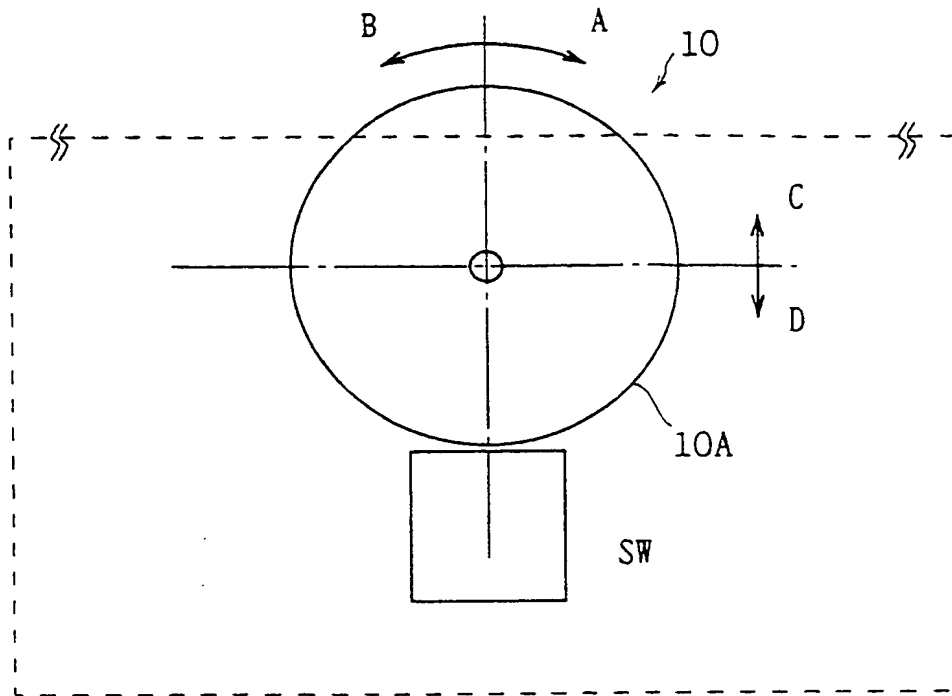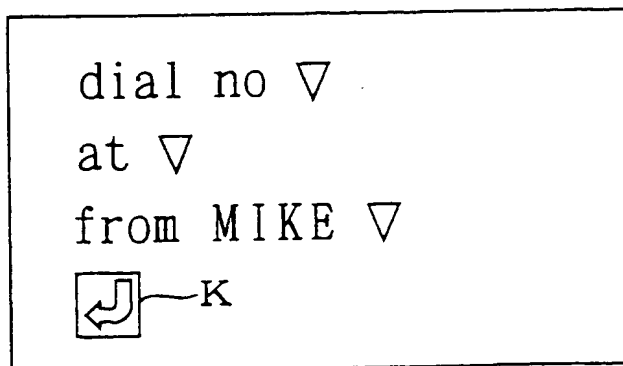
5

10

15

20

25

30

35

40

45

50

55

FIG. 1

FIG. 2

FIG. 6

please call me▽
dial no ▽
at □▽□~K
from ▽

FIG. 3

please call me▽
dial no ▽
at ▽
from □▽□~K

FIG. 5A

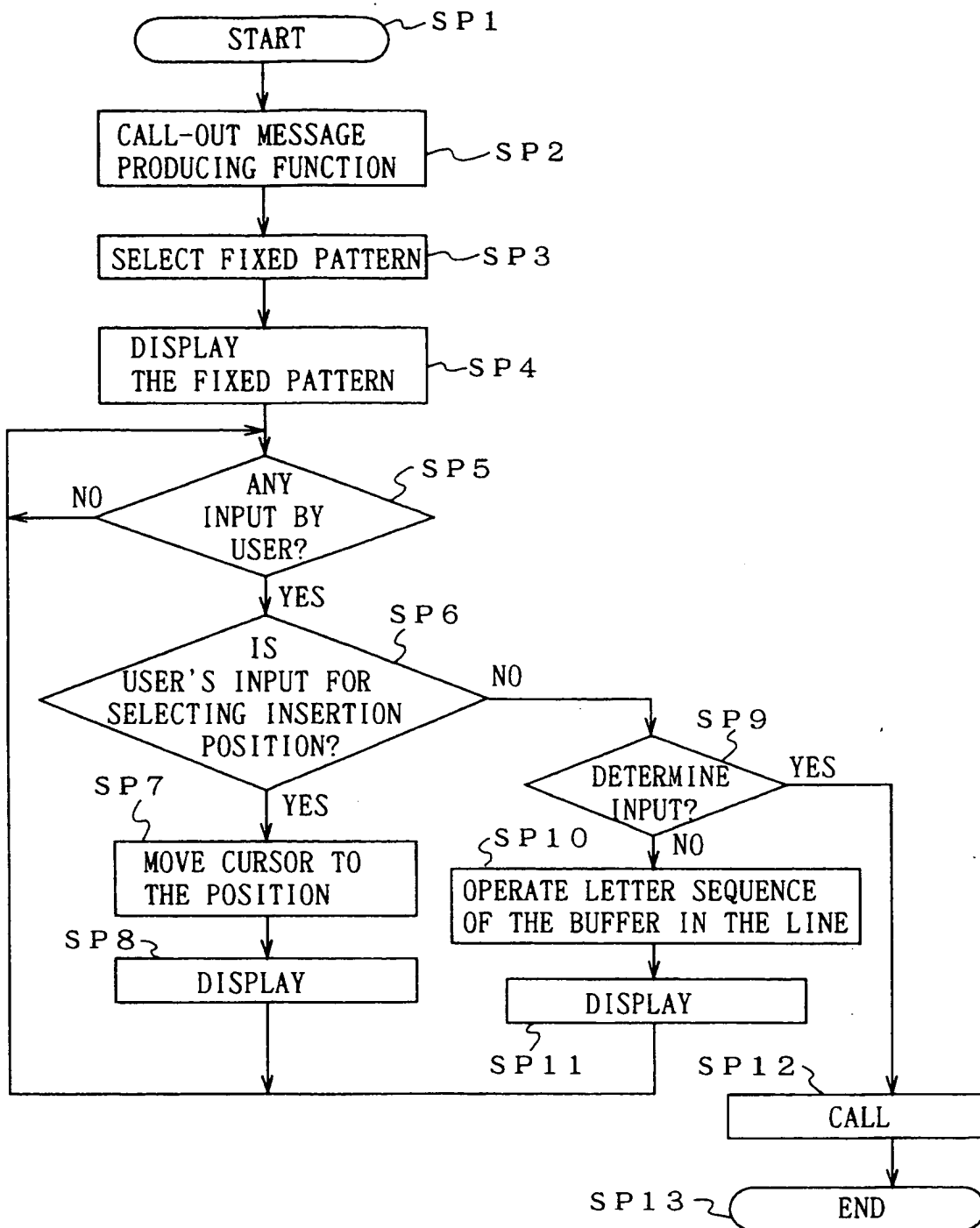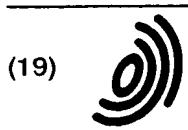please call me▽
dial no ▽
at ▽
from M I□K□~K

FIG. 5B

FIG. 4

THIS PAGE BLANK (USPTO)

(72) Inventors:
• Kunihiro, Takushi,
Sony Corp.
Shinagawa-ku, Tokyo (JP)

• Sudo, Fukuhara,
Sony Corp.
Shinagawa-ku, Tokyo (JP)

(74) Representative:
Nicholls, Michael John
J.A. KEMP & CO.
14, South Square
Gray's Inn
London WC1R 5LX (GB)

(54) **Portable communication terminal capable of transmitting text data**

(57)   In a conventional portable communication terminal device, it is trouble that the whole sentence to be transmitted must be inputted by a user with hand on transmission of an electronic mail. Some fixed forms used comparatively often are stored in the device. It is so arranged that a letter sequence inputted by the user can be inserted to a part of the fixed form thus troublesome in forming a transmission letter is reduced.
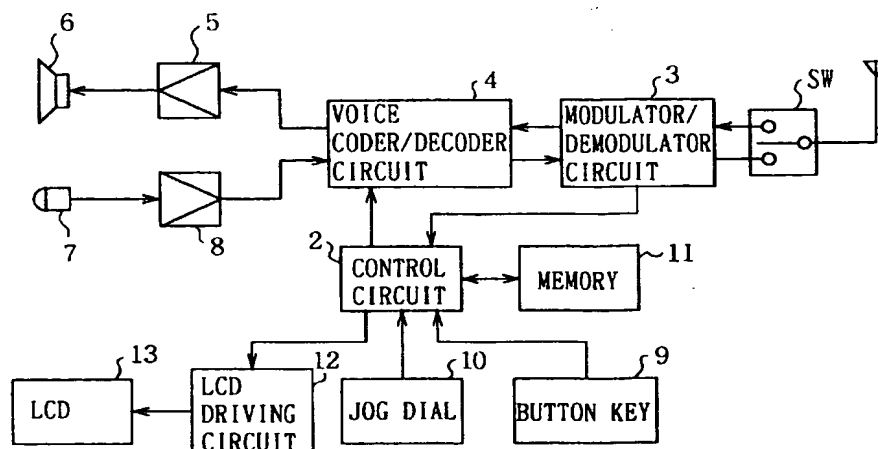
FIG. 1

EP 0 755 126 A3

European Patent
Office

EUROPEAN SEARCH REPORT

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	US 4 799 254 A (DAYTON DOUGLAS C ET AL) 17 January 1989	1	H04B1/38
A	* abstract * * column 2, line 17 - column 3, line 45 * * column 5, line 1 - line 15 * * column 6, line 19 - line 28 * * figures 4,8 *	2-7	

Y	GB 2 283 597 A (GREENVILLE ELECTRONICS LIMITED) 10 May 1995	1,5-7	
A	* abstract * * page 2, line 11 - page 3, line 21 * * page 13, line 31 - page 14, line 5 * * figure 14 *	2-4	

Y	WO 93 10618 A (CUMULUS CORP) 27 May 1993	1,5-7	
A	* abstract * * page 4, line 19 - page 5, line 29 * * page 17, line 22 - page 18, line 4 * * claim 1 *	2-4	
	---		TECHNICAL FIELDS SEARCHED (Int.Cl.6)
P,X	EP 0 693 860 A (MITSUBISHI ELECTRIC CORP) 24 January 1996 * abstract * * column 2, line 50 - column 3, line 32 * * column 6, line 45 - column 7, line 54 * * figures 1,20 * * claims 1-5 *	1-7	H04Q H04B H04M

A	US 5 351 235 A (LAHTINEN PEKKA) 27 September 1994 * abstract * * column 2, line 1 - line 46 * * column 3, line 15 - column 4, line 29 * * claim 1 *	1-7	

	-/--		

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	7 July 1999	Tzimeas, K

EPO FORM 1503 03.82 (P04C01)

2

European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 96 30 5138

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	EP 0 463 856 A (NOKIA MOBILE PHONES LTD) 2 January 1992 * abstract * * column 2, line 49 – column 3, line 30 * * figures 1-3 * * claims 1-3 * -----	5-9	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	7 July 1999	Tzimeas, K

EPO FORM 1503 03.82 (P04C01)

BNSDOCID: <EP___0755126A3_I_>

ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.

EP 96 30 5138

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

07-07-1999

Patent document cited in search report		Publication date	Patent family member(s)			Publication date
US 4799254	A	17-01-1989	AU	592176	B	04-01-1990
			AU	7196587	A	07-01-1988
			CA	1268274	A	24-04-1990
			DE	3788458	D	27-01-1994
			DE	3788458	T	11-05-1994
			EP	0251296	A	07-01-1988
			JP	63026150	A	03-02-1988
GB 2283597	A	10-05-1995	NONE			
WO 9310618	A	27-05-1993	AU	3134593	A	15-06-1993
EP 0693860	A	24-01-1996	JP	8033049	A	02-02-1996
US 5351235	A	27-09-1994	FI	910682	A	13-08-1992
			AT	138769	T	15-06-1996
			AU	663482	B	12-10-1995
			AU	1190892	A	07-09-1992
			DE	69211147	D	04-07-1996
			DE	69211147	T	23-01-1997
			EP	0609209	A	10-08-1994
			WO	9214329	A	20-08-1992
EP 0463856	A	02-01-1992	FI	903221	A	27-12-1991
			AT	148604	T	15-02-1997
			DE	69124428	D	13-03-1997
			DE	69124428	T	05-06-1997
			JP	6085729	A	25-03-1994

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82